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PATENT SPECIFICATION

697,232

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Date of filing Complete Specification: April 2, 1951.

Application Date: April 27, 1950 No. 10404/50.

Complete Specification Published: September 16, 1953.

Index at acceptance: —Classes 78(iv), E15; and 98, B(2b: 4:30).

COMPLETE SPECIFICATION

Improvements in or relating to Platforms made of Corrugated Cardboard, Pasteboard or the like Material

We, THE THOMPSON AND NORRIS MANUFACTURING COMPANY LIMITED, a British Company, of Great West Road, Brentford, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to platforms made of pasteboard, corrugated cardboard, or the like material, and more particularly to portable platforms, such as load carrying pallets.

According to the present invention a platform made of pasteboard, corrugated cardboard, or the like material, comprises a flat panel composed of two or more layers of the material fastened together in face-to-face relation, and a plurality of spaced supporting blocks or pads secured to and extending from one side of the composite panel, each block consisting of a pile of laminations of the material, and the blocks being fastened in recesses in the panel, said recesses being formed by cuts made in at least one of the layers of the panel, and the blocks being fastened in the recesses so that a face of each block abuts an adjacent uncut layer of the panel.

For a better understanding of the invention and to show how it may be carried into effect, alternative embodiments thereof will now be described with reference to the accompanying drawings, in which:—

Figure 1 is an underside plan view of a platform according to one embodiment of the invention.

Figures 2 and 3 are cross-sectional detailed views on a larger scale taken along the lines II—II and III—III respectively of Figure 1.

Figures 4 and 5 are respectively an underside plan view and a transverse cross-section of part of a platform according to a second embodiment.

Figures 6 and 7 are views similar to those of Figures 4 and 5, but illustrating a third embodiment.

Figure 8 is a development of a blank for forming a box-like block employed in a fourth embodiment.

Figure 9 is a plan view of a block employed in the fourth embodiment, and

Figure 10 is a transverse cross-section through part of a platform according to the fourth embodiment.

Referring to Figures 1 to 3, the platform comprises a flat rectangular panel formed of two layers 1, 2 of double-faced corrugated cardboard secured together by wire staples. The underside layer 2 of the panel is formed with a plurality of square recesses spaced apart in substantially parallel rows. As shown in Figure 1, the recesses are formed by marking the appropriate squares on the underside layer 2 of the material, by means of score lines 3, 4, and making diagonal cuts 5 across each square. The scoring and cutting of the squares is effected prior to the securing together of the two layers 1, 2 to form the panel. After the layers have been stapled together, the triangular tabs 6 formed by the cuts are bent outwardly at right-angles to the panel to reveal the recesses.

A block 7, conforming in cross-section to the shape of the recess, is inserted into each recess, and the upper end of the block secured by glue or other adhesive to the upper uncut layer 1 of the panel. The triangular tabs 6 are also secured to the sides of the block to strengthen the connection of the block to the panel.

Each block 7 is of cube form and is constructed by the gluing together of multiple layers of double-faced corrugated cardboard. The laminated blocks are so mounted in the recesses that the laminations thereof lie in planes perpendicular to the plane of the panel, so as to provide the maximum resistance to compressive forces in the vertical direction.

In the second embodiment illustrated in Figures 4 and 5, each of the squares on the lower layer 2 of the panel, is cut along two opposite sides 8, 9 and along the centre line 10 joining those two sides, so as to produce an H-shaped cut. A square recess is then revealed by folding back the rectangular tabs 11 formed by the cuts. In Figure 4 the left hand tab only is shown as folded back, while the right hand tab lies in the plane of the layer 2.

A laminated block 7, formed of double-faced corrugated cardboard, is then glued into the recess, as in the first described em-

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bodiment, and the rectangular tabs 11 secured to the block. As shown in Figure 5, the blocks are preferably arranged so that the tabs 11 may be glued to the flat surfaces at opposite sides of the block, i.e., with the corrugated laminations of the block disposed in planes substantially parallel with the tabs 11.

In the third alternative embodiment illustrated in Figures 6 and 7, the square recesses are each formed by making a substantially U-shaped cut 12 in the lower layer 2, so as to form a square tab 13, which is folded back at right angles to the layer 2 and glued to a laminated block 7 mounted in the recess. In this embodiment also, each block 7 is preferably arranged so that its corrugated layers are parallel to the folded-back tab 13, whereby the tab may be secured to a plane face of the block.

In the further alternative arrangement illustrated in Figures 8, 9 and 10 of the drawings, each of the supporting blocks or pads comprises a box produced by the folding of a single blank 14 of sheet material, cut and creased in the manner shown in Figure 8. The blank 14 is creased both horizontally and vertically to define a bottom panel 15, outer side-wall 16 and inner side-wall panels 17. Each of the panels 16 is formed with a flap 18 and a slot 19 is cut between each panel 16 and an adjacent panel 17. In Figure 8, the dotted lines represent a crease or score line for an inward fold i.e., a fold made by bending both parts of the paper, on either side of the crease line, upwardly from the plane of the drawing, while the chain-lines represent a crease or score-line for a fold in the opposite direction. By folding the blank along the crease lines in the manner indicated, there is produced a double-walled box substantially of cube form and having the flaps or tabs 18 extending outwardly from the upper ends of the outer-side walls. The box is packed with layers of double-faced corrugated cardboard disposed in such a manner that the corrugations lie in planes parallel with the side-walls of the box. The blank 14 is preferably formed of double-faced corrugated cardboard which is of less thickness than the material forming the layers 1, 2 of the platform. Moreover, the width of the slots 19 formed in the blank is such as to permit the inner side walls 17 to seat properly upon the panel 15, when the box is assembled.

As shown in Figure 10, the blocks or pads are secured to the lower layer 2 of the platform by passing each block through an aperture formed in the lower layer 2 and securing the flaps 18 of the box, by glue or staples, to the upper face of the layer 2. The upper layer 1 of the panel is then applied to the lower layer 2 and the whole is assembled together and completed by stitching with wire staples.

In the arrangement illustrated in Figure 10, the square apertures are formed in the lower layer 2 of the panel by making diagonal cuts across each square, in a similar manner to that shown in Figure 1, and then bending back the triangular portions 6a on to the upper face of the lower layer 2, prior to the insertion of the block into the aperture. It will be understood that the apertures may be formed by cutting along all four sides of each square and the blanks formed by the cutting then being removed completely from the lower layer 2.

The arrangement described with reference to Figures 8 to 10 of the drawings, facilitates the production of the blocks by avoiding the operation of sticking together the various layers of material constituting the block, the necessary strength of the blocks being provided by the laminated material tightly clamped within the box.

It will be appreciated that in each of the described embodiments, the blocks may be of any other convenient shape for example, oblong-rectangular, in cross-section, and the recesses formed in the lower layer of the panel of the platform modified accordingly.

In addition, more than two layers of material may be secured together to form the load receiving surface or panel of the platform, and the layers may be partially glued together in addition to fastening by metal staples. Adjacent layers of the panel may also be disposed so that their corrugations extend in directions at right-angles to each other. Moreover, the platforms may be made of layers of plain pasteboard or other similar sheet material secured together in the manner hereinbefore described, to provide a top panel and support blocks or pads therefor.

The platforms are light in weight and may be manufactured easily and cheaply, whilst at the same time providing strong and robust structures for the support and transport of materials.

By appropriate arrangement of the rows of supporting blocks, the platforms are eminently suitable for use as pallets for the transport of materials by load handling trucks of the fork lift type.

What we claim is:—

1. A platform made of pasteboard, corrugated cardboard, or the like material, comprising a flat panel composed of two or more layers of the material fastened together in face-to-face relation, and a plurality of spaced supporting blocks or pads secured to and extending from one side of the composite panel, each block consisting of a pile of laminations of the material, and the blocks being fastened in recesses in the panel, said recesses being formed by cuts made in at least one of the

layers of the panel, and the blocks being fastened in the recesses so that a face of each block abuts an adjacent uncut layer of the panel.

2. A platform as claimed in Claim 1, wherein each recess is formed by cuts made in the lower layer of the panel to produce substantially triangular tabs which are folded or bent outwardly from said lower layer to reveal the recess, and wherein the triangular tabs of each recess are secured to the block of laminated material mounted in the recess.

3. A platform as claimed in Claim 1, wherein each recess is formed by cuts made in the lower layer of the panel to produce at least two substantially rectangular tabs, said tabs being bent or folded outwardly from the said lower layer and secured to the side faces of a block mounted in the recess.

4. A platform as claimed in Claim 1, wherein each recess is formed by cuts made in the lower layer of the panel to produce a single tab which is bent or folded outwardly from the panel along one edge of the tab, and wherein the said tab is secured to a side face of a block of laminated material mounted in the said recess.

5. A platform as claimed in Claim 1, wherein each block comprises a box packed with laminated material each box being mounted in an aperture formed at least in the lowermost layer of the panel.

6. A platform as claimed in Claim 5, wherein each box is formed at its upper edges with tabs and the box is secured in position

within the aperture with the tabs of the box interposed between the apertured layer or layers of the panel and the adjacent uncut layer or layers of the panel.

7. A platform as claimed in Claim 5 or 6 wherein the box is formed from a single blank of sheet material.

8. A platform as claimed in any one of the preceding Claims 1 to 4 wherein each block is constructed by the gluing together of multiple layers of corrugated cardboard or the like sheet material.

9. A platform as claimed in any one of the preceding claims, wherein the laminations of the material of the blocks lie in planes perpendicular to the panel of the platform.

10. A platform as claimed in any one of the preceding claims, wherein the supporting blocks are arranged in parallel rows to permit the platform to be used as a pallet for the transport of materials.

11. A platform made of corrugated cardboard, pasteboard or the like sheet material substantially as hereinbefore described with reference to and as illustrated in Figures 1 to 3, Figures 4 and 5, Figures 6 and 7, or Figures 8 to 10, of the accompanying drawings.

Dated the 2nd day of April, 1951.

HASELTINE, LAKE & CO.,

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England, and

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Agents for the Applicants.

PROVISIONAL SPECIFICATION

Improvements in or relating to Platforms made of Corrugated Cardboard, Pasteboard or the like Sheet Material

We, THE THOMPSON AND NORRIS MANUFACTURING COMPANY LIMITED, a British Company, of Great West Road, Brentford, Middlesex, do hereby declare this invention to be described in the following statement:—

This invention relates to platforms made of corrugated cardboard, pasteboard or the like sheet material, and more particularly to portable platforms for the support and transport of materials.

According to the present invention a platform made of corrugated cardboard, pasteboard or the like sheet material, comprises a flat panel composed of two or more sheets of material fastened together, and a plurality of spaced supporting blocks or pads secured to and extending from one side of the panel, each block comprising a series of laminations of sheet material clamped together and the block being mounted in a recess which conforms to the shape of the block and is formed by cuts made in certain of the layers of the panel, each of the blocks abutting and being securely fastened to the adjacent uncut layer

or layers of the panel.

For a better understanding of the invention, alternative embodiments thereof will now be described.

One convenient form of the invention comprises a flat rectangular panel formed of two layers of corrugated cardboard secured together by wire staples. The layer of cardboard on the underside of the panel is formed with a plurality of square recesses spaced apart in substantially parallel rows. The recesses are formed by marking the appropriate squares on the underside layer of the material, and making diagonal cuts across each square, the cuts being made in the lower layer only of the panel. The triangular tabs formed by the cuts are then bent outwardly at right-angles to the panel to reveal the recesses.

A block, conforming in cross-section to the shape of the recess, is inserted into each recess, and the upper end of the block secured by glue or other means to the upper uncut layer of the panel. The triangular tabs

are also secured to the sides of the block, to strengthen the connection of the block to the panel.

Each block is of cubical form and constructed by the gluing together of multiple layers of corrugated cardboard. The blocks are so mounted in the recesses that the corrugations of the layers extend at right-angles to the panel, so as to provide the maximum resistance to compressive forces in the vertical direction.

In an alternative arrangement, each of the squares on the lower layer of the panel, is cut long two opposite sides and along the centre line joining those two sides, so as to form an H-shaped cut. A square recess is then revealed by the folding back of the rectangular tabs formed by the cuts in the lower layer. A block is then glued into the recess, as in the above described embodiment, and the rectangular tabs secured to the block. The blocks are preferably arranged so that the tabs may be glued to the flat surfaces at opposite sides of the block, i.e., with the corrugated layers of the block disposed in planes substantially parallel with the bent tabs.

In a further alternative arrangement, the square recesses are each formed by making a substantially U-shaped cut in the lower panel, so as to provide a square tab, which is bent at right angles to the panel and glued to a block mounted in the recess. In this arrangement also, each block is preferably arranged so that its corrugated layers are parallel to the bent tab, whereby the tab may be secured to a plane face of the block.

In another form of the platform, the recesses are provided by cuts made in the lower layer of the panel, and along all four sides of each square, the blanks, formed by the cutting, being removed completely from the lower layer of the panel. In this case the supporting blocks or pads, each consists of a box formed from a single blank of corrugated cardboard or the like material, the lower end of the box being integral with the vertical walls thereof. The upper free ends of the box walls constitute flaps which are bent out-

wardly substantially normal to the walls and the interior of the box packed with layers of material. Each box is then mounted in a corresponding recess and the flaps of the box interposed between the upper and lower layers of the panel, the assembly being completed by stitching with wire staples. This embodiment facilitates the production of the blocks by avoiding the operation of sticking together the various layers of material constituting the block, the necessary strength of the blocks being provided by the laminated material tightly clamped within the box.

It will, of course, be understood that the blocks may be of any other convenient shape in cross-section, and the recesses formed in the lower layer of the panel modified accordingly.

In addition, more than two layers of material may be secured together to form the surface or panel of the platform, and the layers may be partially glued together in addition to fastening by metal staples. Adjacent layers of the panel may also be disposed so that their corrugations extend in directions at right-angles to each other. Moreover, the platforms may be made of layers of plain pasteboard or other similar sheet material secured together in the manner hereinbefore described, to provide a top panel and support blocks or pads therefor.

The platforms are light in weight and may be manufactured easily and cheaply, whilst at the same time providing strong and robust structures for the support and transport of materials.

By appropriate arrangement of the rows of supporting blocks, the platforms are eminently suitable for use as pallets for the transport of materials by load handling trucks of the fork lift type.

Dated this 27th day of April, 1950.

HASELTINE, LAKE & CO.,

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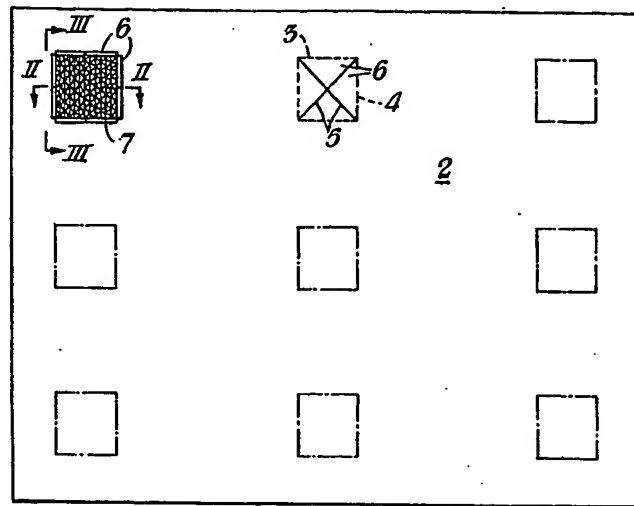


FIG. 1.

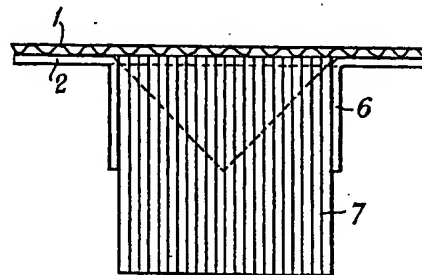


FIG. 2.

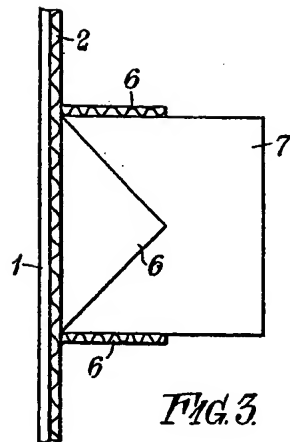


FIG. 3.

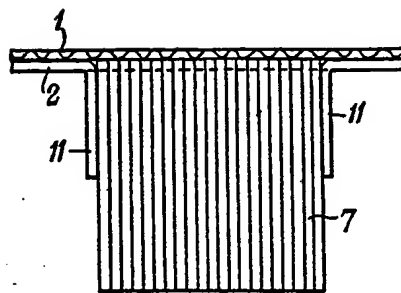
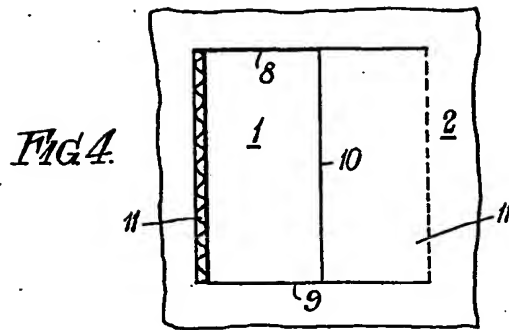


Fig. 5.

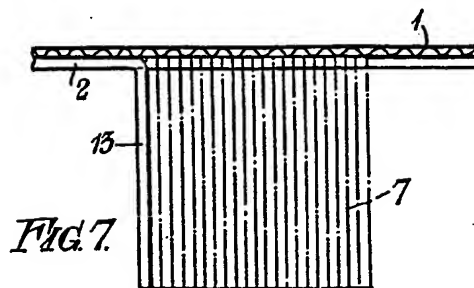
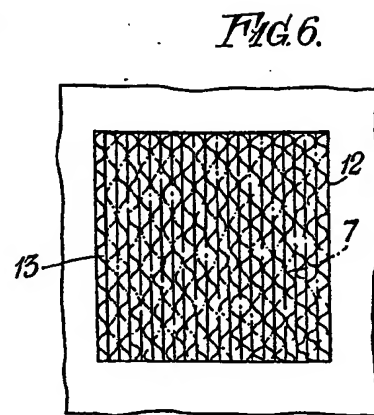
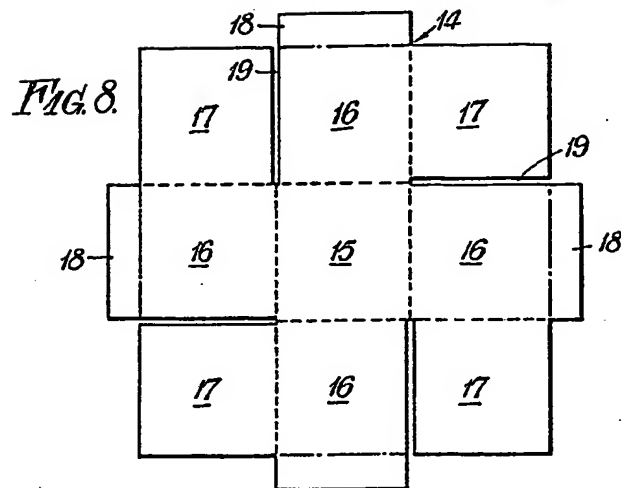
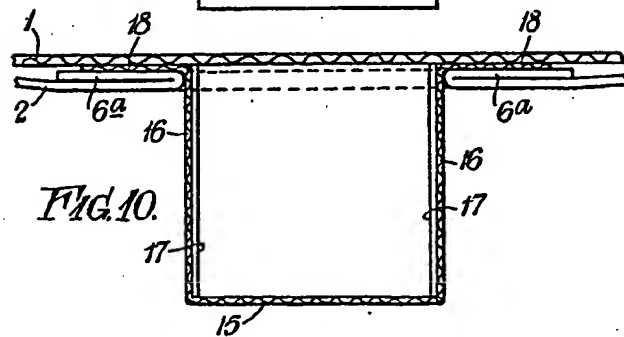
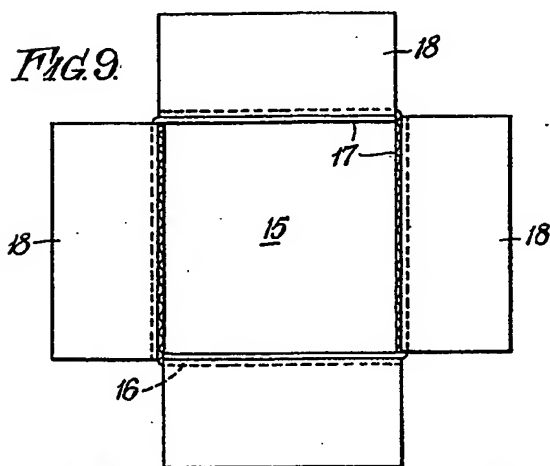
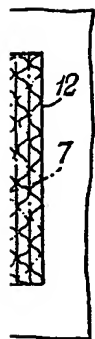
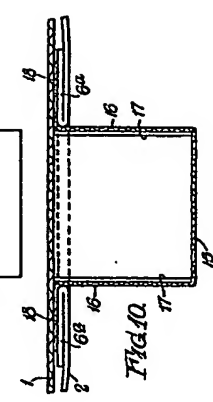
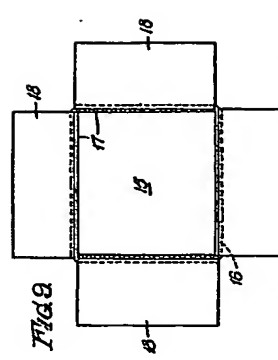
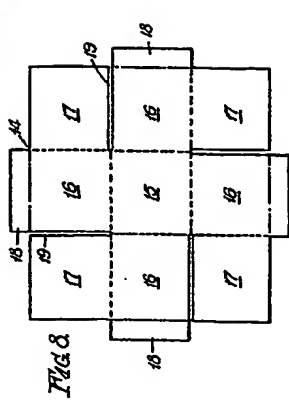
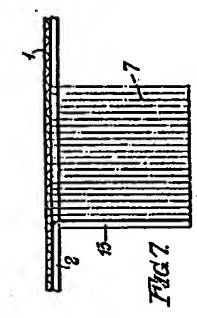
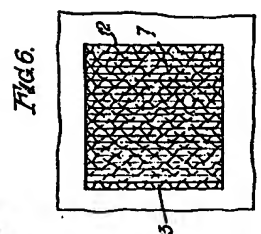
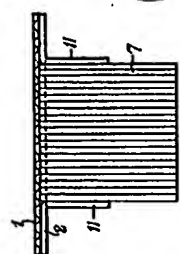
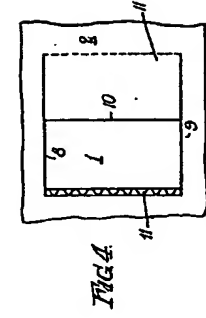


Fig. 7.



6.





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